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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,807	12/05/2003	Olga Bandman	PF-0651-1 DIV	3257

22428 7590 12/20/2004

FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

MONSHIPOURI, MARYAM

ART UNIT

PAPER NUMBER

1652

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/729,807

**Applicant(s)**

BANDMAN ET AL.

**Examiner**

Maryam Monshipouri

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-29 is/are pending in the application.
- 4a) Of the above claim(s) 2, 11 and 14-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 6, 7, 9, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 4, 5 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date filed 12/5/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: attachment.

Applicant's response to restriction requirement filed 9/21/2004 is acknowledged.

Applicant elected Group II invention (claims 3-7, 9-10, 12-13) with traverse.

In traversal of restriction requirement applicant argues the following:

(I) That the unity of invention standard must be applied in national stage applications and according to that standard polypeptides of Group I and the DNA of Group II exhibit corresponding technical features and should be examined together.

(II) That the search of Groups I and II is not unduly burdensome as the DNA of Group II encodes the Polypeptide of Group I.

(III) According to section 803.04 of MPEP, which states that while contending that DNA sequences encoding different proteins "constitute independent and distinct inventions" the commissioner has decided to "permit a reasonable number of DNA sequences to be claimed in a single application". Applicant continues by stating that to this end The patent Office determined that normally ten sequences constitute a reasonable number for examination purposes and that the number does not constitute an undue burden on the office. Indeed the office states that " up to ten independent and distinct nucleotide sequences will be examined in a single application without restriction". Accordingly, the Examiner's contention that inventions (A)-(B) are "distinct from the other" and therefore subject to restriction is not consistent with the Office practice. Applicant again cites MPEP section 803.04 which states that "only the ten nucleotide sequence selected in response to the restriction requirement and any other claimed sequences which are patentably indistinct therefrom will be examined". For this

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reason applicants request that inventions (K) to (N) drawn to SEQ ID NO:29-32 to be examined together with invention (J).

These arguments were fully considered but ere found **unpersuasive** for the following reasons: In response to applicant's **first** argument it should be noted that unity of invention standard is only applicable to 371 applications and not their divisional. The instant case is a divisional of case 09/889,238 which is 371 application. Therefore the claims in this case are restricted under 35 USA 121 and 372 standard which appropriately restricts between DNA and polypeptide according to criteria provided in the previous office action.

With respect to applicant's **second** argument the examiner respectfully disagrees with the applicant the rejoinder of Groups I-II inventions does not impose an undue burden of searching on the examiner. As clearly indicated in the previous office action said inventions belong to entirely different subclasses. It may be true that there is some overlap between searches required for each invention of Groups I-II, but said searches as shown by their separate classification are not coextensive and therefore rejoinder of said inventions **does impose an undue burden of searching** on the examiner.

In response to applicant's **third** argument the examiner is well ware that MPEP section 803.04 states that "up to ten independent and distinct inventions will be examined together in a single application without restriction". However, said section specifically stresses that rejoinder of said extra sequence with the elected invention should not create an undue burden of searching on the Office, which is the case here. The examiner maintains that rejoinder of any other inventions such as A,B, J and K-N

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with the elected invention would require many additional searches (both of sequences and of key words) in both commercial and in house data bases, and would unduly impose a search burden of search and thereby examination on the examiner as each of said sequences are drawn to patentably distinct inventions and should each be examined and searched in a separate application. Further, said MPEP section simply indicates that up to ten DNA sequences may be examined together in a single case and currently up to ten sequences (namely SEQ ID NO:28) is under examination.

Finally, in view of the response provided above, in addition to arguments provided in the previous office action, restriction is maintained and is hereby made **final**.

### ***Claim Objections***

Claims 3-7 and 9-10 are objected to because of the following informalities: said claims (specially base claims 3, and 9) depend from non-elected invention of Group I as well as non-elected sequences set forth as SEQ ID NO:1-9, 11-18. Claims 4-7 and 10 are merely objected to for depending upon base claims under objection. Appropriate correction is required.

Claim 3 is objected to because of the following informalities: said claim depends from claim 1 which recites the grammatically incorrect phrase "a naturally occurring an amino acid" in part (b). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 which depends from claim 1, recites the terms "biologically active fragment" and "immunogenic fragment" which are unclear. Applicant has not clearly defined these terms in the specification. It is not clear what constitutes biological activity of "biologically active fragments" and what are the structural and functional characteristics of "immunogenic fragments". Appropriate clarification is required.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 6-7, 9, 12 and 13 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for isolated polynucleotides having SEQ ID NO:28 or encoding SEQ ID NO:10, does not reasonably provide enablement for any of the following:

- (a) Polynucleotides having at least 90% identity to SEQ ID NO:28 or capable of encoding polypeptides having 90% identity to SEQ ID NO:10, with no function.
- (b) Polynucleotides encoding "biologically active" fragments of SEQ ID NO:10 with no function.
- (c) Polynucleotides encoding "immunogenic" fragments of SEQ ID NO:10 with no function.

(d) Polynucleotides comprising at least 60 contiguous nucleotides of SEQ ID NO:28 with no function.

The criteria for undue experimentation, summarized in *re Wands*, 8, USPQ2n 1400 (Fed. Cir. 1988) are: 1) the quantity of experimentation necessary, 2) the amount of direction or guidance presented, 3) the presence and absence of working examples, 4) the nature of the invention, 5) the state of prior art, 6) the relative skill of those in the art, 7) the predictability or unpredictability of the art, and 8) the breadth of the claims.

The specification fails to teach which critical residues in claimed polynucleotides must be retained such that the above mentioned DNA homologs are capable of encoding human peptidase HPEP-10. No examples of such DNA residues are provided either. Current state of prior art indicates that once more than 3-4 residues of a DNA sequence encoding a full-length polypeptide with peptidase activity is mutated or deleted (see parts c-d above) said mutated DNA sequence is not necessarily going to encode a product with the function of said full-length polypeptide. Therefore, due to lack of sufficient guidance and examples provided in the specification and due to unpredictability of prior art as to which residues within a DNA sequence encoding a full-length polypeptide must be retained such that, after mutation, said DNA sequence is still capable of encoding said full-length polypeptide, one of skill in the art has to go through the burden of undue experimentation in order to screen for those polynucleotides that are within the scope of this invention and as such the claims go beyond the scope of the disclosure.

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Apart from lack of enablement due to absence of function above, claimed polynucleotides are subject to scope of enablement rejection due to lack of sufficient structural information. With respect to polynucleotides of parts b-c, above, it should be noted that, as mentioned previously, the exact definition of said terms (i.e. biologically active or immunogenic fragments) are not provided. Thus it is not possible to determine whether said fragments are of sufficient length to be able to encode any products with function. With respect to part (d) above, it should be noted that 60 contiguous bases are totally insufficient to encode any product with activity rendering said polynucleotides subject to total lack of enablement.

Since said polynucleotides are not enabled (claims 3, 12-13) vectors and host cells comprising said polynucleotides (claims 6-7) and methods of expressing said polynucleotides (claim 9) are not enabled either.

Claims 3, 6-7, 9-10, 12-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 3 (and its dependent claims 6-7), 9 (and its dependent claim 10), 12 and 13 are each directed to the following **genera** of polynucleotides which has not been adequately described in the specification (see the following:



(a) A **genus** of polynucleotides having at least 90% identity to SEQ ID NO:28 or capable of encoding polypeptides having 90% identity to SEQ ID NO:10, with no function.

(b) A **genus** of polynucleotides encoding "biologically active" fragments of SEQ ID NO:10 with no function.

(c ) A **genus** of polynucleotides encoding "immunogenic" fragments of SEQ ID NO:10 with no function.

(d) A **genus** of polynucleotides comprising at least 60 contiguous nucleotides of SEQ ID NO:28 with no function.

The specification does not contain any disclosure of the function of all DNA sequences that are recited in sections (a)-(d), above. The genera of cDNAs that comprise these above cDNA molecules is a large variable genera with the potentiality of encoding many different proteins. Therefore, many functionally unrelated DNAs are encompassed within the scope of these claims, including partial DNA sequences. The specification discloses only a **single species** for each claimed genus (namely SEQ ID NO:28) which is insufficient to put one of skill in the art in possession of the attributes and features of all species within the claimed genus. Therefore, one skilled in the art cannot reasonably conclude that the applicant had possession of the claimed invention at the time the instant application was filed.

Applicant is referred to the revised interim guidelines concerning compliance with the written description requirement of U.S.C. 112, first paragraph, published in the Official Gazette and also available at [www.uspto.gov](http://www.uspto.gov).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3, 6-7, 9 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Baker et al. (US200030004311, filed Jan 2, 2003). Baker teaches an isolated DNA sequence that encodes a polypeptide having 99.6% identity to SEQ ID NO:10 of this invention, its DNA sequence has 99.9% identity to SEQ ID NO:28 of this invention (see the attached alignment), anticipating claims 3, 12 and 13. Under section entitled "preparation of PRO", sub-sections 1-5, Baker teaches various vectors and host cells used for expression of its DNA sequence (See SEQ ID NO:191-192), its expression methods and its expression product, anticipating claims 6-7, and 9.

Claims 3, 6-7, 9 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Robison et al.. (U.S. Patent No., 6,331,427, issued 12/18/2001). It is noted that applicant claims priority to three provisional applications. However, the examiner could not find support for claimed subject matter in provisional application 60/172,247 which has the earliest filing date namely 1/11/99. Thus, the earliest possible filing date that applicant may benefit from, is 5/1999. In view of said date, Robison

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teaches an isolated DNA sequence (see its SEQ ID NO:78) that has 88.85% identity to SEQ ID NO:28 of this invention (see the attached alignment). Since said DNA sequence identity can be increased by 1.5-2.5% upon changing the analysis parameters, it is believed that said DNA sequence is capable of displaying at least 90% identity to SEQ ID NO:28 of this invention, anticipating claims 12-13. Said DNA sequence also can encode a "biologically active fragment" or an "immunogenic fragment" of SEQ ID NO:10, anticipating claim 3. In columns 2, and 49-52 Robison teaches about vectors and host cells comprising its DNA sequences and methods of expressing said sequences anticipating claims 6-7, and 9.

**No claims are allowed.**

***Allowable Subject Matter***

An isolated DNA sequence having SEQ ID NO:28 or encoding a SEQ ID NO:10 is free of prior art. Further, the prior art does not teach or suggest preparing such specifically claimed DNA sequence. Hence, said DNA sequence is both novel and non-obvious.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on 7:00 a.m to 4:30 p.m. except for alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnanthapu Achutamurthy can be reached on (571) 272-0928. The fax

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phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Maryam Monshipouri Ph.D.

Primary Examiner

\*\*\*

Db 1104 CCGAATTCATCCATTAATTAGCTTTTCAGGAGCGTGTGAAGAAAATVAGATGACGCCGTC 1163

Qy 381 CysAspIysThrThrArgIysThrIysPhePheValGlyIleTrpCysTProArgPheAsp 400

Db 1164 TGTATATAGACCCAAATAAATAAACCCTACTTCTTTGTGGCATTTTGCTGTGAGGTTTGAT 1223

Qy 401 GluMetThrGlnThrMetAspIysGlyPheProGlnArgValAlaValHisPheProGly 420

Db 1224 GAAATGACCAAAACCATGAGCAAAAGGATTCGCCACAGAGTGTGTAACATCTTCCCGA 1283

Qy 421 IleSerIleArgValAspAlaAlaPheGlnTrpIysGlyPhePhePheSerArgGly 440

Db 1284 ATCGATTCGCGTGTGATGCTGCTTTCAGTACAAAGATTCCTCTTTTTCAGCCGTGA 1343

Qy 441 SerIysGlnPheGlnIysIysAsnIleIysThrIysAsnIleThrArgIleMetArgThrAsn 460

Db 1344 TCAAGACGATTTGATATCAACATTAAGACAAAGATATTCACCGGAATCATGAGAACTAAT 1403

Qy 461 ThrTrpIleGlnIysIysGlnProIysAsnSerSerPheIlePheAspIleAsnIysGln 480

Db 1404 ACTTGTTTCAAGGCAAGAACCAACAACTCTCATTTGGTTTGTATATCAACAGGAA 1463

Qy 481 LysIleHisSerGlyIleIysIleIysIleLeuTrpHisIysSerLeuSerLeuPheIlePhe 500

Db 1464 AAACGACATTCAGGAGGATTAAGATATTTGTATCATATAGAGTTTAAGCTTTATATTTT 1523

Qy 501 GlyIleValHisIleLeuLysAsnThrSerIleTrpGln 513

Db 1524 GGTATTTGTCATTTGCTGAAACCACTTCATTTATTCAA 1562

RESULT 3

US-09-280-116-78//c

/ Sequence 78, Application US/09280116A

/ Patent No. 6331427

/ GENERAL INFORMATION:

/ APPLICANT: Robison, Keith E.

/ TITLE OF INVENTION: Nucleic Acid Molecules Encoding Human Protease Homologs

/ FILE REFERENCE: 5800-24, 035800/176965

/ CURRENT APPLICATION NUMBER: US/09/280,116A

/ CURRENT FILING DATE: 1999-03-26

/ NUMBER OF SEQ ID NOS: 268

/ SOFTWARE: PatentIn Ver. 2.0

/ SEQ ID NO 78

/ LENGTH: 1687

/ TYPE: DNA

/ ORGANISM: Homo sapiens

/ FEATURE:

/ OTHER INFORMATION: matrix metalloproteases

/ FEATURE:

/ NAME/KEY: misc\_feature

/ LOCATION: (1)..(1687)

/ OTHER INFORMATION: n = a, t, c or g

US-09-280-116-78

Alignment Scores:

Pred. No.: 3,83e-288 Length: 1667

Score: 2455.00 Matches: 454

Percent Similarity: 99.78% Conservative: 0

Best Local Similarity: 99.78% Mismatches: 0

Query Match: 88.85% Indels: 1

Db: 3 Gaps: 0

US-10-729-807-10 (1-513) x US-09-280-116-78 (1-1687)

Qy 60 AspAspIysIleArgIleGluMetGlnAlaPhePheGlyLeuThrValThrGlyLysLeuAsp 79

Db 1675 GATGACAAATTTGGGGAATTCAGACATTTTGGATTGACGTAGCTGGAATAAACTGGAC 1616

Qy 80 SerAsnThrLeuGlnIleMetIysThrProArgCysGlyValProAspValGlyGlnTrp 99

Db 1615 TCACAAACCCCTTGATGATCATGAAGACACCCAGGTGTGGGGTGCCCTGATGTGGGCCAGTAT 1556

QY 100 GYTYRThirleupProGlyTyrArgLysTyrAsnLeuThrTyrArgLleLeuAsnTyrThr 119  
 DB 1555 GGCTACACCTCCCTGGTGGAGAAAATCAACCTCCACATCAATATAATCAATATCT 1496  
 QY 120 ProAspMetAlaArgAlaIaValAspGluAlaIleGlnGluGlyLeuGluValTyrSer 139  
 DB 1495 CCGGATATGGCAGACAGCTGCTGGATGGAGCTATCCAGAAAGCTTTAGAACTGGGAGC 1436  
 QY 140 LysValThrProLeuLysPheThrLysIleSerLysGlyIleAlaAspIleMetIleAla 159  
 DB 1435 AAGTCACTCCATCAATAATCAACAGATTTCAGAGGAGATTGACATCATCATGATGCGC 1376  
 QY 160 PheArgThrArgValHisGlyArgCysProArgTyrPheAspGlyProLeuGlyValLeu 179  
 DB 1375 TTATGAGACTGAGTCCATGCTGGTGGTCTCCGCTATTTGATGGTCCCTTGGAGAGTCTT 1316  
 QY 180 GlyHisAlaPheProProGlyProGlyLeuGlyLysThrHisPheAspGluAspGlu 199  
 DB 1315 GGCCATGCTCTTCTCTGCTGGTCCGGTCCGGTGGTGGATGACATCATTTGATGAGATGAA 1256  
 QY 200 AsnTyrThrLysAspGlyAlaGlyPheAsnLeuPheLeuValAlaAlaHisGluPheGly 219  
 DB 1255 AACTGGACCAAGATGAGAGATTCACATTTCTTGTGGCTGCTCATGATGATTTGCT 1196  
 QY 220 HisAlaLeuGlyLeuSerHisSerAsnAspGlnThrAlaLeuMetPheProAsnTyrVal 239  
 DB 1195 CATGCACTGGGCTCTCTCATCATGATCAACAGCTTGATGTTCCCAATTAATATGC 1136  
 QY 240 SerLeuAspProArgLysTyrProLeuSerGlnAspAspIleAsnGlyIleGlnSerIle 259  
 DB 1135 TCCCTGGATCCCAAAAATACCACTTTCACAGATGATCATCATGATGATTCACAGTCCATC 1076  
 QY 260 TyrGlyValLeuProLysValProAlaLysProLysGluProThrIleProHisAlaCys 279  
 DB 1075 TATGAGAGTCTGCTTAAGTACTGCTTAAGCCAAAGAACCCACTTACCCCATGCTCT 1016  
 QY 280 AspProAspLeuThrPheAspAlaIleThrThrPheArgArgLysValLeuMetPheLys 299  
 DB 1015 GACCTGACTGACTTTGACGCTATCACAACTTCCGAGAGATTAATGTTCTTTAA 956  
 QY 300 GlyArgHisLeuThrPargLleTyrTyrAspIleThrAspAlaGluPheGluLeuIleAla 319  
 DB 955 GCGAGGACCTATGAGAGATCTATATGATATCAACGATTTGAGTTGATTAATGCT 896  
 QY 320 SerPheTyrProSerLeuProAlaAspLeuGlnAlaAlaTyrGluAsnProArgAspLys 339  
 DB 895 TCATCTGGCCATCTCTGCCAGCTGATCTGCCAAGCTGCATACAGAAACCCAGAGATAG 836  
 QY 340 IleLeuValPheLysAspGluAsnPheTyrMetIleArgGlyTyrAlaValLeuProAsp 359  
 DB 835 ATCTGCTTTTAAAGATGAATACTTGATGATGATGAGAGATATGCTGCTTCCAGAT 776  
 QY 360 TyrProLysSerIleHisThrLeuGlyPheProGlyArgValLysLysIleAspAlaI 379  
 DB 775 TATCCCAATCATCTCACTACATTGGTTTCCAGACCGGCTGTAAGAAATATGATCAGC 716  
 QY 379 AValCysAspLysThrThrArgLysThrTyrPhePheValGlyIleTyrCysTyrArgPh 399  
 DB 715 CGCTGTGATAGACCAACAAAAAACCTACTTCTTGGGCAATTGGTGGTGGAGCTT 656  
 QY 399 eAspGluMetPheThrThrMetAspLysGlyPheProGlnArgValValLysHisPhePr 419  
 DB 655 TGATGAATATGCCAAACCATGAGCAAGATTCGCCAAGAGTGTAAACACTTTCC 596  
 QY 419 OGlyIleSerIleArgValAspAlaAlaPheGlnTyrLysGlyPhePhePheSerAr 439  
 DB 595 TGGATATGATCCGTTGATGCTGCTTCCATGCAAAAGATTTCTTTTTCAGCCG 536  
 QY 439 GGLyserysGlnPheGlyTyrAsnIleLysThrLysAsnIleThrArgLleMetArgPh 459  
 DB 535 TGGATCAAGCAATTTGATCAACATTAAAGCAAAATATTTACCCGAATCATGAGAAC 476  
 QY 459 rAsnThrTyrPheGlnCysLysGluProLysAsnSerSerPheGlyPheAspIleAsnLys 479

DB 475 TAAATCTGTTGTTCAATGCAAGAACCAAGAACTCTGATTTGGTTTGAATACACA 416  
 QY 479 sGluLysAlaHisSerGlyGlyIleLysIleLeuTyrHisLysSerLeuSerLeuPheI 499  
 DB 415 GGAATAAGCATTTCAGAGGAGCATAAAGATATGATCATTAAGAGTTTAAGCTTGTAT 356  
 QY 499 ePheGlyIleValHisLeuLeuLysAsnThrSerIleTyrGln 513  
 DB 355 TTTTGGATTTGTTCAATTTGCTGTGAAAAACACTTCTATTTATCA 313  
 RESULT 4  
 US-09-023-655-1174  
 : Sequence 1174, Application US/09023655  
 : Patent No. 6607879  
 : GENERAL INFORMATION:  
 : APPLICANT: Cocks, Benjamin G.  
 : APPLICANT: Susan G. Stuart  
 : APPLICANT: Jeffrey J. Sellhammer  
 : TITLE OF INVENTION: COMPOSITION FOR THE DETECTION OF BLOOD CELL GENE  
 : NUMBER OF SEQUENCES: 1508  
 : CORRESPONDENCE ADDRESS:  
 : ADDRESS: INCYTE PHARMACEUTICALS, INC.  
 : STREET: 3174 PORTER DRIVE  
 : CITY: PALO ALTO  
 : STATE: CALIFORNIA  
 : COUNTRY: USA  
 : ZIP: 94304  
 : COMPUTER READABLE FORM:  
 : MEDIUM TYPE: floppy disk  
 : COMPUTER: IBM PC compatible  
 : OPERATING SYSTEM: PC-DOS/MS-DOS  
 : SOFTWARE: word perfect 6.1 for Windows/MS-DOS 6.2  
 : CURRENT APPLICATION DATA:  
 : APPLICATION NUMBER: US/09/023,655  
 : FILING DATE: HERZWITH  
 : CLASSIFICATION:  
 : PRIOR APPLICATION DATA:  
 : APPLICATION NUMBER:  
 : FILING DATE:  
 : ATTORNEY/AGENT INFORMATION:  
 : NAME: Zeller, Karen J.  
 : REGISTRATION NUMBER: 37,071  
 : REFERENCE/DOCKET NUMBER: PA-0001 US  
 : TELECOMMUNICATION INFORMATION:  
 : TELEPHONE: (650) 855-0555  
 : TELEFAX: (650) 845-4166  
 : INFORMATION FOR SEQ ID NO: 1174:  
 : SEQUENCE CHARACTERISTICS:  
 : LENGTH: 434 base pairs  
 : TYPE: nucleic acid  
 : STRANDEDNESS: single  
 : TOPOLOGY: linear  
 : IMMEDIATE SOURCE:  
 : LIBRARY: GENBANK  
 : CLONE: g188618  
 : US-09-023-655-1174  
 : Alignment Scores:  
 : Pred. No.: 3,46-142 Length: 1434  
 : Score: 1254.00 Matches: 247  
 : Percent Similarity: 66.04% Conservative: 70  
 : Best Local Similarity: 51.46% Mismatches: 145  
 : Query Match: 45.39% Indels: 18  
 : DB: 4 Gaps: 9  
 US-10-729-807-10 (1-513) x US-09-023-655-1174 (1-1434)  
 QY 1 MetLysArgLeuLeuLeuLeuCysLeuPhePheIleThrPheSerSerAlaPheProLeu 20  
 DB 1 ATGAGAGACTTTCACATCTTACTGTGCTGCGTGGCAGATTGCTCAGGCTATCATC 60

Tue Nov 16 16:10:23 2004

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Page 6

DB 1381 ACTTGTTTCATGCAAGAACCAAGACCTCTTCATTGTTTGTATCAACAGAA 1440  
QY 481 LysAlaHisSerGIyGIyIleYsIleLeuYrHisIySerLeuSerLeuPheIlePhe 500  
DB 1441 AAGACATTCAGGAGGCACTAAGATTCATCAAGAGTTAAGCTTTATTTT 1500  
QY 501 GIyIleValHisLeuLeuIlyAsnThsSerIleYrGln 513  
DB 1501 GSTATTGTTTCATTTCAGAAACACTTCATTATTCOA 1539  
RESULT 5  
US-10-028-072-191  
Sequence 191, Application US/10028072  
Publication No. US20030004311A1  
GENERAL INFORMATION:  
APPLICANT: Baker, Kevin P.  
APPLICANT: Beresini, Maureen  
APPLICANT: Deforge, Laura  
APPLICANT: Desnoyers, Luc  
APPLICANT: Filvaroff, Ellen  
APPLICANT: Gao, Wei-Qiang  
APPLICANT: Gerritsen, Mary E.  
APPLICANT: Goddard, Audrey  
APPLICANT: Godowski, Paul J.  
APPLICANT: Gunney, Austin L.  
APPLICANT: Sherwood, Steven  
APPLICANT: Smith, Victoria  
APPLICANT: Stewart, Timothy A.  
APPLICANT: Tumas, Daniel  
APPLICANT: Watanabe, Colin K  
APPLICANT: Wood, William  
APPLICANT: Zhang  
TITLE OF INVENTION:  
FILE REFERENCE:  
CURRENT APPLICATION NUMBER: US/10/028,072  
CURRENT FILING DATE: 2001-12-19  
PRIOR APPLICATION NUMBER: 60/049911  
PRIOR FILING DATE: 1997-06-18  
PRIOR APPLICATION NUMBER: 60/056974  
PRIOR FILING DATE: 1997-08-26  
PRIOR APPLICATION NUMBER: 60/059113  
PRIOR FILING DATE: 1997-09-17  
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PRIOR FILING DATE: 1997-09-17  
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PRIOR FILING DATE: 1997-09-18  
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PRIOR FILING DATE: 1997-10-28  
PRIOR APPLICATION NUMBER: 60/063561  
PRIOR FILING DATE: 1997-10-28  
PRIOR APPLICATION NUMBER: 60/063704  
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PRIOR APPLICATION NUMBER: 60/069334  
PRIOR FILING DATE: 1997-12-11  
PRIOR APPLICATION NUMBER: 60/069694  
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PRIOR APPLICATION NUMBER: 60/072320  
PRIOR FILING DATE: 1998-01-23  
PRIOR APPLICATION NUMBER: 60/073612  
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PRIOR FILING DATE: 1998-02-09  
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PRIOR FILING DATE: 1998-03-12  
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PRIOR FILING DATE: 1998-03-20  
PRIOR APPLICATION NUMBER: 60/079294  
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PRIOR APPLICATION NUMBER: 60/079663  
PRIOR FILING DATE: 1998-02-27  
PRIOR APPLICATION NUMBER: 60/079728  
PRIOR FILING DATE: 1998-03-27  
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PRIOR FILING DATE: 1998-03-31  
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PRIOR FILING DATE: 1998-04-09  
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PRIOR FILING DATE: 1998-04-14  
PRIOR APPLICATION NUMBER: 60/081817  
PRIOR FILING DATE: 1998-04-15  
PRIOR APPLICATION NUMBER: 60/081818  
PRIOR FILING DATE: 1998-04-15

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[illegible]



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Page 8

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Y	361	ProlyserlelleIleThLeuGlyPheProGlyArgValylsIleaspaIalaVal	380
b	1104	CCCAATCATCATCAATCAATTAGGTTTTCCAGAGAGTGTAAGAAATTAATCAACCGTC	1163
Y	381	CysAspLysThrThrArgLysThrTyrPheheValGlyIleIlePcysTrpArgPheAsp	400
b	1164	TGTGATTAAGACCAAGAAAAACCACTCTTTTGTGGGCATTTGGTGGAGGTTGAT	1223
Y	401	GluMetThrGlnThMetAspLysGlyPheProGlnArgValylsHisPheProGly	420
b	1224	GAATAATGACCAAAACCATGACCAAGAGATCCCGAGAGATGTGTAACATCTTCCTGGA	1283
Y	421	IleSerIleArgValAspAlaIalaphesGlnTyrIleGlyPhehePheheSerArgIly	440
b	1284	ATCAGATCCGGTGTGATGCTGCTTCACAGACCAAGATCTCTTTTTCAGCCGTGGA	1343
Y	441	SerLysGlnPheGlnTyrAsnIleLysThrLysAsnIleThrArgIleLeuArgThrAsn	460
b	1344	TCAACCAATTGGATTACACCTTTAAGCAAAAGAAATTTCCCGAATCATAGCAACTAAT	1403
QY	461	ThrTrpPheGlnCysLysGlnProLysAsnSerPheGlyPheAspIleAsnLysGln	480
b	1404	ACTGTGTTTCAATGCAAAAGAACCAAGAACCTCCATTGTGTTTAAATTCACAAGAGA	1463
QY	481	LysAlaHisSerGlyGlyIleLysIleLeuTyrHisLysSerLeuSerLeuPheIlePhe	500
b	1464	AAAGCACTTCAGAGGAGTAAGAATATTGATCATAGAGTTTAAGCTGTTTATTTTT	1523
QY	501	GlyIleValHisLeuLeuLysAsnThrSerIleTyrGln	513
b	1524	GGATTGTTCATTTGCTGAAAAACCTTCATTATTATGAA	1562

[illegible]

RESULT 6  
US-10-140-808-191

; Sequence 191, Application US/10140808  
; Publication No. US20030017563A1

; GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.

APPLICANT: Beresini, Maureen

APPLICANT: DeForge, Laura

APPLICANT: Desnoyers, Luc

APPLICANT: Filvaroff, Ellen

APPLICANT: Gao, Wei-Qiang

APPLICANT: Gerritsen, Mary E

APPLICANT: Goddard, Audrey

APPLICANT: Godowski, Paul J.

APPLICANT: Gurney, Austin L.

APPLICANT: Sherwood, Steven  
smith victor

APPLICANT: SMITH, VICTORIA  
APPLICANT: STEWART, TIMOTHY

APPLICANT:	Stewart, Timothy
APPLICANT:	Thomas Daniel

APPLICANT: Thomas, Daniel  
APPLICANT: Watanabe Colin

APPLICANT: WOOD, WILLIAM

APPLICANT: WOOD, WILLIAM  
APPLICANT: Zhang, Zemin

APPLICANT: Zhang, Zemin /  
TITLE OF INVENTION: SECRETED

SECRET  
TITLE OF INVENTION: ACTS

FILE REFERENCE: P333081C182

FILE REFERENCE: F3330KJCL8Z  
CURRENT APPLICATION NUMBER:

CURRENT FILING DATE: 2002-0

Prior Application removed -

NUMBER OF SEQ ID NOS: 550

7 NOV 68 09 00Z  
; SEQ ID NO 191

LENGTH: 1647

TYPE: DNA

ORGANISM: Homo sapien

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Alignment Scores:

Pred. No.: .0

Score: 2752.00

Age Group	Percentage of Respondents
18-29	85%
30-49	75%
50-69	70%
70+	65%
All	80%



[REDACTED]

Length: 1647  
Matches: 512

Qy 321 PheTrpProSerLeuProAlaAspIleuGlnAlaIaIaTyGluAsnProArgAspLysIle 34



Tue Nov 16 16:10:29 2004

us-10-729-807-28.rapb

Page 5

APPLICANT: Gao,Wei-Qiang  
APPLICANT: Gerritsen,Mary E.  
APPLICANT: Goddard,Andrey  
APPLICANT: Godowski,Paul J.  
APPLICANT: Gurney,Austin L.  
APPLICANT: Sherwood,Steven  
APPLICANT: Smith,Victoria  
APPLICANT: Stewart,Timothy A.  
APPLICANT: Tuma,Daniel  
APPLICANT: Watanabe,Colin K  
APPLICANT: Zhang,William  
TITLE OF INVENTION:  
FILE REFERENCE:  
CURRENT APPLICATION NUMBER: US/10/028,072  
CURRENT FILING DATE: 2001-12-19  
PRIOR APPLICATION NUMBER: 60/049911  
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PRIOR APPLICATION NUMBER: 60/069278  
PRIOR FILING DATE: 1997-12-11  
PRIOR APPLICATION NUMBER: 60/069334  
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PRIOR APPLICATION NUMBER: 60/069694  
PRIOR FILING DATE: 1997-12-16  
PRIOR APPLICATION NUMBER: 60/072320  
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Page 6

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Best Local Similarity:	99.81%
Query Match:	93.92%
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Conservative:	
Mismatches:	
Indels:	
Gaps:	

QY	24	ARGAAGCGCTTCGCTTCGTGTGCTTCCTTAAACATTTTCTCTGCATTTCCCTTA	83
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QY	84	GTCGCGATGACGGAATAAGAAAATATGCAACTGGCTACGGCATATATCAACAGTTC	14
DB	21	ValArgMetThrGluAsnGluGluAsnMetGlnLeuAlaGlnAlaTyrLeuAsnGlnPhe	40
QY	144	TACTCTTTGAATAGAAAGGAAATCATCTTGTTCAAAGCAAGAAATAGAGTTCATAGAT	20
DB	41	TyrSerLeuGluIleGluGlyAsnHisLeuValGlnSerLysAsnArgSerLeuIleAsp	60
QY	204	GACAAATATTCGGGAATGCAACGACTTTTTCGATTCAGACGACCTGGGAAATCGGACTCA	26
DB	61	AspLysIleLeuArgIleMetGlnAlaPhePheGluYleuMetValThrGlyLysLeuAspSer	80

QY	264	AACACCCCTTGAGATCATGAAGACACCCAGGCTGGGGGGTGCCTGATGTGGCCAGATATGAC	323
Dp	81	AanThiLeuGluIleMetLysThrProArgCysGlyValProAspArgGlyIleGlnIleArgly	100
QY	324	TACACCCCTCCCTGGGTGGAGAAATACAACTCCACCTACAGAAATATAACATATCTCCG	383
Dp	101	TyrThrLeuProGlyIlePheArgLysTyrAsnMetThrTyrArgIleLeuAsnTyrThrPro	120
QY	384	GATATGGACAGAGCTGCTGTGAGATGAGCGCTATCCAGAGAGGTTTGAGAGTGTGGACGAA	443
Dp	121	AspMetAlaArgAlaValAlaValAspGluAlaIleGlnGlnGlyLeuGlnValAlaThrSerLys	140
QY	444	GTCACCTCCATTAATAATCCACCAATATTTCAAGGGGATTGGACACATCATGATTCCTTT	503
Dp	141	ValThrProLeuLysPheThrLysIleSerLysGlyIleAlaAspIleMetIleAlaPhe	160
QY	504	AAGATCTCAAGTCATGTGGCGGTGCTCCGCTATTTTGATGATGATCCCTGGAGATGCTTGGC	563
Dp	161	ArgThrIleArgValHisGlyArgCysProArgTyrPheAspGlyProLeuGlyValLeuGly	180
QY	564	CATGGCTTCTCCCTGTGATCCGGGTGGGGTGGAGAACATCTTTGATGAGAGATGAAGAA	623
Dp	181	HisAlaPheProProGlyIleProGlyLeuGlyGlyAspThrHisPheAspGluAspGluAsn	200
QY	624	TGGACCAAGATGAGACGAGATTCACCTGTCTTCTGTGGCTGCTCAGATTAATTTGGTAT	683
Dp	201	TpThrLysAspArgLysAlaGlyPheAsnLeuPheLeuValAlaHisIsoleuIleHis	220
QY	684	GCACGTGGGGCTCTCTCACTCCATGATCAACAGCCCTGATGATGTTGCCAATATATGCTCC	743
Dp	221	AlaIleuGlyLeuSerHisSerAsnAspGlnThrAlaLeuMetPheProAsnTyrValSer	240
QY	744	CTGATATCCCAAAATATCCCATTTCTCAGATGATATCAATGAGATCCAGGCCATCTAT	803
Dp	241	LeuAspProArgLysTyrProLeuSerGlnAspAspIleAsnGlyIleGlnSerIleTyr	260
QY	804	GGAGGTCTGGCTAAGATACCTGCTAAGACCAAGAAACCAACATATCCCATGCTGTGAC	863
Dp	261	GlyGlyLeuProLysValIleProAlaLysProLysGlnProThrIleProHisIleAspAsp	280
QY	864	CCTGACTGACTTTTGACGCTATCACACTTTCGCAAGAAAGTATGTTCTTTAAAGC	923
Dp	281	ProAspLeuThrPheAspAlaIleThrThrPheArgArgGluValMetCpheHeuLysGly	300
QY	924	AGCACACTTAGAGAGATCTATTGATATCACAGATGTGAAGTTGATTAATTCCTTCA	983
Dp	301	ArgHisLeuThrPheArgIleTyrTyrAspIleThrAspValGlnPheGluLeuIleAlaSer	320
QY	984	TTCCTGGCATCTCTGCAGAGCTGATCTCTCAAGCTGCATACAGAAACCCAGATATAGATT	1043
Dp	321	PheTyrProSerLeuProAlaAspLeuGlnAlaIleTyrGluAsnProArgLysPheIle	340
QY	1044	CTGGTTTTTAAGATGAAAACTCTGAGATGATACAGAGATATGACGTCTTGGCAATAT	1103
Dp	341	LeuValIlePheLysAspGluAsnPheThrMetIleArgGlyTyrAlaValLeuProAspTyr	360
QY	1104	CCCAATTCATTCATACATTAAGTTTCCAGACGCTGTGAAGAAATAGATTCAGCCGCTC	1163
Dp	361	ProLysSerIleHisThrLeuGlyPheProGlyArgValLysLysIleAspAlaAlaVal	380
QY	1164	TGTGATTAAGACACACAGAAAACTCATTTTGTGGGCAATTTGGTGTGAGAGTTTGAAT	1223
Dp	381	CysAspLysThrThrArgLysThrTyrPhePheValGlyIleTyrPysThrArgPheAsp	400
QY	1224	GAATAGACCCAAACCATGGACAAGAGATTCCGCGACAGAGGTGTAAACACTTCTCTGGA	1283
Dp	401	GluMetThrGlnThrMetLysArgLysPheProGlnArgValValLysHisPheProGly	420
QY	1284	ATCACTATACCGTGTGAGATCGAGCTTCCTACGATACAAAGATCTCTCTTTTGACGCGCTGA	1343
Dp	421	IleSerIleLeuArgValAspAlaAlaPheGlnTyrLysGlyPhePhePheSerLysArgLys	440
QY	1344	TCAAAGCAATTTGAATCAACATTTAAGACAAAGATATTTACCGGAATCATGAAATCTAAT	1403

Qy	984	ATTCGTGGCATCTCTCGCAGCGTAAATGGCAAGCTGGCATACGAGAACCCCGAGAATAGATT	1043
Db	321	PhetpProsetLeuProlaAspLeuGlnAlaValTyrGluAspProkAspIysPhe	340
Qy	1044	CTGGTCTTTTAAAGATGAAGAACTTCTGATGATCAAGATATAGCTGTCTTCCAGATATT	1103
Db	341	LeuValAPheIysAspGluAspPheIlePheTyrValValLeuProAspGly	360
Qy	1104	CCCAATATCCATCCCATTAATGAGTTTCCCGAGACGTGTAAAGAAATAGATACACCCGTC	1163
Db	361	PheIysSerIleHisThrLeuGlyPheProGlyValValIleValIleAspAlaVal	380
Qy	1164	TGTGATTAGACCAACAAGAAACCTACTTTTGTGGCATTTGGTGCCTGAGGTTTGAAT	1223
Db	381	CysAspIysThrIleThrArgIysThrTyrPhePheValGlyIleIlePyrSerIlePheAsp	400
Qy	1224	GAAATGACCCAAACCATGACCAAGATTCGCCAGAGAGTGGTAAACACTTTCCTGGA	1283
Db	401	GluMetThrGlnThrMetAspIysGlyPheProGluArgValValIleHisPheProGly	420
Qy	1284	ATCACTTATCCGTTGTGAGCGCTTCACATAAAGAGATTCCTCTTTTTCAGCGCTGGA	1343
Db	421	IleSerIleArgValAspAlaIlePheGlnTyrIleGlyPhePhePheHisSerArgGly	440
Qy	1344	TCGAAGCAATTGAAATCAACACTTTAAGACAAAGAAATATTATCCCGAATCATGAAGCTAAT	1403

Db	441	SeLysGlnPheGluTyrAsnIleYshThryAsnIleThrArgIleLeuThrArgHisAsn	460
Qy	1404	ACTTGGTTTCATGCAGCAAGACCAAGACCTCTCATTTGGTTTGTATCAACAGAA	1463
Db	461	ThTrpPheGlnCysLysGluTyrCysAsnSerSerGluPheAspIleAsnYrgln	480
Qy	1464	AAAGCATTTCAGAGGCGATAAGATATTGATCATAGAGTTAAAGCTGTATATTTT	1523
Db	481	LysAlaHisSerCylYylLeuYrIleuYrHisLysSerLeuSerLeuPheIlePhe	500
Qy	1524	GGTATGTCATTTGGTGAAGAACCTCTCTATTATCAA	1562
Db	501	GlyIleValHisIleuLeuLysAsnHisSerIleYrgln	513

## RESULT 5

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US-10-140-808-192
Sequence 192, Application US/10140808
Publication No. US20030017563A1
GENERAL INFORMATION:
APPLICANT: Baker, Kevin P.
APPLICANT: Beresini, Maureen
APPLICANT: DeForge, Laura
APPLICANT: Desnoyers, Juc
APPLICANT: Filvaroff, Ellen
APPLICANT: Gao, Wei-Qiang
APPLICANT: Geritsen, Mary E.
APPLICANT: Goddard, Audrey
APPLICANT: Godowski, Paul J.
APPLICANT: Gurney, Austin L.
APPLICANT: Sherwood, Steven
APPLICANT: Smith, Victoria
APPLICANT: Stewart, Timothy A.
APPLICANT: Tumas, Daniel
APPLICANT: Watanabe, Colin K
APPLICANT: Wood, William
APPLICANT: Zhang, Zhenh
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC
FILE REFERENCE: P3330R1C182
CURRENT APPLICATION NUMBER: US/10/140,808
CURRENT FILING DATE: 2003-05-07
Prior Application removed - See File Wrapper or Palm
NUMBER OF SEQ ID NOS: 550
SEQ ID NO 192
LENGTH: 513
TYPE: PRT
ORGANISM: Homo Sapien
US-10-140-808-192

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US-10-729-807-28 (1-1627) x US-10-140-808-192 (1-513)

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QY	84	GTCCGGATGAGGAAAAATGAAGAAATATGCAATGGCTCAGGCAATATCTAACCAAGTTC	143
Db	21	ValArgMetTrpGluAsnGluGluAsnMetGlnLeuAlaGlnAlaTyrLeuAsnGlnPhe	40
QY	144	TACCTCTTGAATATGAAGGGAATCATCTTGTCTCAAGACAAGAAATGAGAGTCTCATGAT	203
Db	41	TyrSerLeuGluIleGluGluGlyAsnHisLeuValGlnSerLeuLysAsnSerLeuIleAsp	60
QY	204	GACAAAAATCGGGAATATGCAAGCATTTTGTGATGACAGTACTGGAAAATCGGACTCA	265

D	61	AspValIleArgGluMetGlnAlaIlePhePheGlyLeuThrValIleThrLysIleuAspSer	80
Q	264	AAACACCTTGAATCATTAAGACACCCAGGTGGGGTGCTGATGTGGCCAGTATGGC	323
D	81	AsnThrIleuGlnIleMetLysThrProArgCysGlyValProAspValGlnGlnTyGly	100
Q	324	TACACCTCCCTGGGTGGAGAAAATAACCTCAACCTCAACAGATAATAACTACTCCG	383
D	101	TyrThrIleuProGlyTyrPargLysTyrAsnIleuThrTyrArgIleIleuSerTyrPro	120
Q	384	GATTATGGCAGCAGAGCTGCTGTGGATGAGGCTATATCCAGAAAGTTTAAAGTGGAGCAA	443
D	121	AspMetAlaIleArgAlaIleAlaIleAspGlnAlaIleGlnGlnGlyLeuIleValIlePheLys	140
Q	444	GTCACCTCACTAAATTCACCAAGATTTCAAGGGAGTTGCACAGACATCATGTGCTCTT	503
D	141	ValThrProLeuLysPheThrLysIleSerLysGlyIleAlaAspIleMetIleAlaPhe	160
Q	504	AGGACTCCAGTCCAGTGGTGGTGTCCCGCATTTTGAATGGCCCTTGGGACTGGATGC	563
D	161	ArgThrArgValHisGlyLysCysProArgTyrPheAspLysProLeuLysValLeuGly	180
Q	564	CATGCTTTCCTCCTGTGTGCGGGCTGGGTGGTGAACATCATTTTGTATGAGATGAAAC	623
D	181	HisAlaIleProProGlyPyrGlyLeuGlyGlyAspThrHisPheAspLysAspGlnSer	200
Q	624	TGGACCAAGATGAGAGGAGATTCACATTTGTTCTGTGGCTGATCATGATATTTGGTAT	683
D	201	TyrThrLysAspGlyValGlyPheAsnIleuPheIleuValAlaAlaHisGlnIleuGlnHis	220
Q	684	GCACGTGGGGCTCTCTCACTCCATGATCAACACCCCTTATGTTCCCAATTATGTCTCC	743
D	221	AlaLeuGlyLysLeuSerHisSerAspAspGlnThrAlaLeuMetPheProAsnTyrValSer	240
Q	744	CTGGATCCCAAGAAATATCCCACTTTCACAGATGATATCAATGGATCCAGTCCATCTAT	803
D	241	LeuAspProArgLysTyrProIleuSerGlnAspSerLysAsnGlyIleGlnIleIleTyr	260
Q	804	GAGAGCTGGCCCTAAGTACCTGTAAAGCCAAAGAAACCACTTATACCCATGCTGTGAC	863
D	261	GlyGlyLysProLysValProAlaLysProLysGlnProThrIleProHisAlaCysAsp	280
Q	864	CCGTGACTGACTTTTGAAGCATGACACACTTCCGAGAGAAATATGTTCTTTAAAGC	923
D	281	ProPheIleuThrPheAspAlaIleThrThrPheArgArgGlyValMetCysPheLysGly	300
Q	924	AGGCACCTTATGGAGATCTATTATGATATACAGGATGTGAGTTGAATTAATGCTTCA	983
D	301	ArgHisIleuThrPargIleTyrTyrAspIleThrAspValGlnIleuIleuIleAlaSer	320
Q	984	TTCGTGGCATTCTGTCCGAGCTGATCTGTCAAGCTGCATACAGAAACCCAGATTAAGATT	1043
D	321	PheThrProSerIleuProIleAspIleuGlnAlaIleTyrGlnAsnProArgAspLysIle	340
Q	1044	CTGGTTTATTAAGATGAAAACCTTCTGAGTATACAGGATATGCTGTCTTCCCAATTTAT	1103
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Q	1104	CCCAATTCATCATACATTAAGTTTTCAGACAGCGTGAAGAAATATAGTACACCTGC	1163
D	361	ProLysSerIleHisThrLeuGlyPheProGlyArgValLysLysIleAspAlaIleAla	380
Q	1164	TGTGATTAAGCACACAGAAAACCTACTTCTTGTGGGCAATTTGGTGTGAGGTTTGAT	1223
D	381	CysAspLysThrThrArgLysThrTyrPhePheValGlyIleTyrCysThrPargPheAsp	400
Q	1224	GAAATGACCCAAACCATGAGCAAAAGATTCCCGCAGAGGTGGTAAACACTTCTCTGA	1283
D	401	GluMetThrGlnThrMetAspLysGlyPheProGlnArgValValLysHisPheProGly	420
Q	1284	ATCAGATTCGGTTGATGCTGCTTCCAGTACAAAGATCTTCTTTTTCAGCCGTGGA	1343